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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

ALESSANDRO MORELLI ET AL

U.S. Serial No. 10/588,010

Group Art Unit 3721

Filed: August 1, 2006

H. Desai, Examiner

FOLDING MACHINE FOR FOLDING
CONTINUOUS WEB MATERIAL AND
RELATIVE FOLDING METHOD

Alexandria, Virginia
October 9, 2008

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

R E S P O N S E

Dear Sir:

This is in response to the official action mailed April 9, 2008. Applicants have considered the outstanding official action. It is respectfully submitted that all of the claims are directed to patentable subject matter as set forth below.

The sole outstanding rejection is of claims 21-46 under 35 U.S.C. §103(a) over U.S. Patent No. 3,229,974 (Banks) in view of U.S. Patent No. 5,064,180 (Wingate).

Applicants respectfully submit that the combination of Banks and Wingate does not teach or suggest

the claimed folding machine for folding a web material or the claimed method of folding a web material. The primary reference Banks teaches a paper folding machine having only a mechanically interacting jaw-tucker system (jaw 34 and tucker 35). Banks does not describe any attraction means to either attract or retain the tissue webs, in the folding cavity before jaw 34 acts on the tissue webs. Tucker 34 serves to position the webs for gripping by the jaws. Banks states that in operation of the folding machine each tucker tucks the webs into an opposite cooperating jaw pair while the jaws are open, the tucker is withdrawn and the jaws close to grip the tucked webs (column 4, lines 28-36). The Examiner acknowledges that Banks does not disclose an electrostatic system to attract the webs (page 2 of office action) and thus relies on Wingate. Applicants submit, however, that Wingate upon combination with Banks does not make up for the shortcomings of Banks to provide the invention as claimed.

Wingate does not relate to folding machines, but rather to a diverter machine. After a paper web passes through a rotary printing press, it is fed to a folding unit where processing of the printed copy occurs (column 1, lines 8-11). The teaching of Wingate is directed to the diversion

of the printed copy or signature stream, after the signatures are conducted through the folding unit, into a plurality of streams for the purpose of effecting a split delivery of the signatures into separate piles (column 1, lines 12-17 and column 3, lines 51-55).

The object of Wingate is to reduce noise and moving parts and to avoid damage to the signatures being diverted by the diverter. To achieve these objects, Wingate teaches passing the signatures 11 through electrostatic bars 16 and 17 to apply a positive charge to a leading edge of successive signatures. The signatures are then moved into a gap between opposing contra-rotating cylinders 1 and 2 provided with oppositely charged electrostatic bars 3 to 10, which attract the signatures alternatively on one side and on an opposite side so that the signature lies on a bar and by rotation of the cylinder is caused to be diverted into different directions between either conveyor belts 14 or 15 into piles 20 or 21.

The electrostatic charge is the only force acting on the signatures and is the only force necessary to solve the problem recognized by Wingate. There is no teaching or suggestion in Wingate that electrostatic attraction can be used to cause a web to enter a cavity in a rotating roller

to position the web for grasping by a mechanical gripper so that the web can be folded. The purpose of applicants' invention is not to reduce moving parts. Applicants' claimed machine has at least the same number of moving parts as in the machine described in Banks. The primary reference of Banks concerns a folding machine provided with two folding rollers and mechanical gripping jaws. The combination as applied by the Examiner would make Wingate unsuitable for its intended use, i.e., solving the problem of movable mechanical parts, noise and damage to the signatures, since the Examiner's combination results in signatures being gripped by mechanical members. Further, since Wingate simply describes electrostatic retention onto a diverter cylinder surface, no suggestion is present to combine this feature with a mechanical gripping element in a folding machine. In Wingate, the only action performed on the signatures is to divert their trajectory, folding already having been accomplished. Only a low retention force is necessary for achieving a diversion effect on the signatures. A greater gripping is required of the web along a folding line as well as retention of the web by a gripping member to provide a fold in the web. No such folding action is required or performed by the structure described in

Wingate. One skilled in the art, therefore, would not have considered, much less combined, Wingate to improve the folding machine of Banks so as to provide applicants' invention as claimed in view of the above differences.

Assuming for the sake of argument and illustration, however, that one skilled in the art, starting from Banks, would have considered the teachings of Wingate for improving the machine described in Banks, based on Wingate one would have removed all mechanical members of Banks and replaced them with electrostatic bars to charge a web material in order to hold a web material by other electrostatic bars present on rotating cylinders. This is due to the fact that Wingate only teaches using electrostatic attraction force without mechanical members. Wingate seeks to reduce moving parts and not to provide a different or more complex combination including both mechanical and electrical elements. This would be contrary to the stated purpose of Wingate which requires that no mechanical members are provided in order to reduce moving parts, and thus damage to the signatures, and noise.

Applicants' folding machine and method of folding, in contradistinction include electrostatic force as a means to introduce a web material to be folded into a gripping

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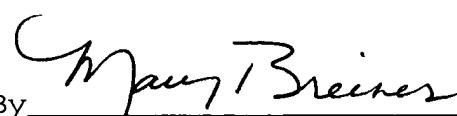
member which subsequently mechanically grips the web material along a transverse folding line and keeps the gripped web material on the folding roller until a fold has been generated and the web material can be released. Neither Banks nor Wingate teach or suggest using an electrostatic member in combination with a mechanical gripping member to provide folding of a web material as claimed by applicants.

Accordingly, Banks in combination with Wingate does not render the claimed machine and method obvious within the meaning of 35 U.S.C. §103(a). Withdrawal of the §103 rejection is respectfully requested.

Reconsideration and allowance of the claims is respectfully urged.

Respectfully submitted,

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